Bartkowski

Simpson

INSTRUMENTS THAT STAY ACCURATE

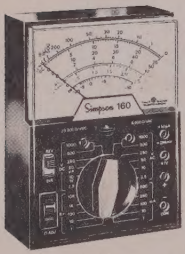
260 Add-A-Tester Adapter

OPERATOR'S MANUAL

D. C. AMMETER MODEL 661

SIMPSON ELECTRIC COMPANY
5200 W. Kinzie St., Chicago, Illinois 60644
Area Code 312, Telephone 379-1121
In Canada, Bach-Simpson, Ltd., London, Ontario

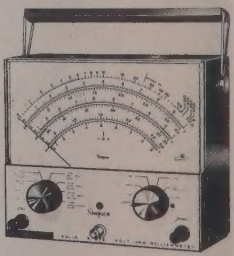
new VOM's from Simpson



160 Handi-VOM®

Just 3 5/16" Wide . . .
with Full-Size VOM Features

- 20,000 Ω VDC . . . 5,000 Ω VAC
- ±2% DC . . . ±3% AC
- 5 Resistance Ranges . . . Plus a 0-250 DC Millivolt Range



313 Solid-State VOM

VTVM Features . . . VOM Conveniences

- Uses a single 9-volt battery
- 10 Meg Ω DC . . . 11 Meg Ω AC
- Large 7" scale

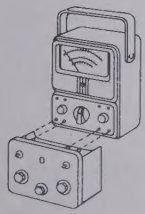
Write for bulletin 2078

Simpson has over 1,400 stock sizes and types of panel meters, too!

Write for bulletin 2079

OPERATOR'S MANUAL

D. C. AMMETER MODEL 661



Just plug it in

SIMPSON ELECTRIC COMPANY

5200 W. Kinzie St., Chicago, Illinois 60644
Area Code 312, Telephone 379-1121
In Canada, Bach-Simpson, Ltd., London, Ontario

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5-68 NMJ-B & L 1-118756

FIGURE 1 - SIMPSON DC AMMETER MODEL 661 ADAPTER

OPERATOR'S MANUAL

SIMPSON DC AMMETER MODEL 661 ADAPTER

SECTION 1

GENERAL DESCRIPTION

INTRODUCTION

The Simpson DC Ammeter Adapter Model 661 is a compact, accurate, wide-range instrument. DC currents up to 25 amperes can be measured with this instrument when used in conjunction with a Simpson 260, (any series), 250, 255, 261, or 270 V.O.M.

NOTE: Statements made throughout this manual referring to the 260 Series III apply also to the 250, 255, 261 and later series 260's unless otherwise noted.

The Simpson VOM-plus-adapter concept is completely unique in approach and versatility. Each of the adapter models, of which the DC Ammeter is but one example, provides specific measurement and testing capabilities at a fraction of the cost normally required for separate testers.

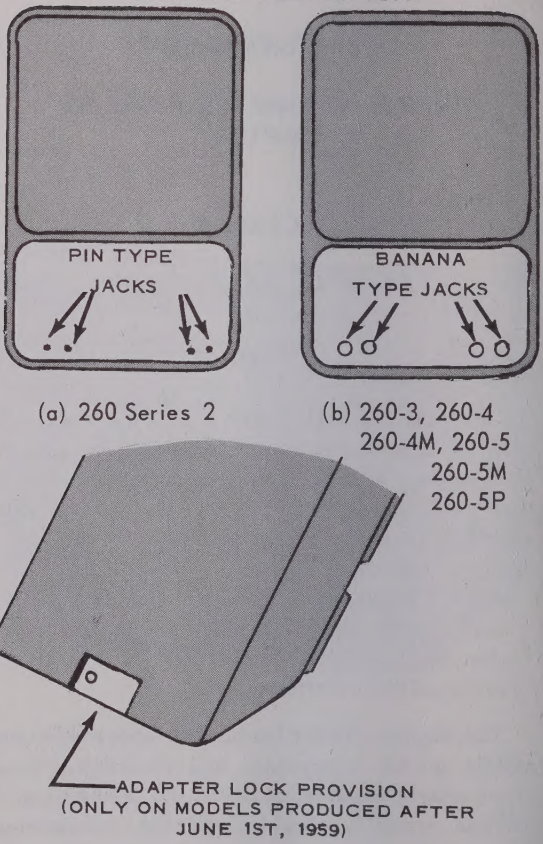


FIGURE 2 - 260 IDENTIFICATION

ACCESSORIES FURNISHED

Each instrument is furnished with an Operator's Manual. Available are four extra pin-type plugs, 0-007255. The 4 pin-type plugs are used only when the Model 661 is to be used with a 260 Series II (see figure 2 for 260 Series identification).

SPECIFICATIONS

DC Current:

Ranges: 0-1.0/2.5/5/10/25 amperes

Accuracy:

Adapter only: ±¾%

Adapter with 260: ± 2½% (F.S.) nominal

Adapter with 270: ± 1½% (F.S.)

Power Input: None required.

Size: 5-5/16 x 4-3/8 x 3-7/16 inches

Weight: 1 lb., 2 oz.

MODIFICATION KITS

Adapter Case Kit 401 for 260 Series III and 270.

Use of this kit is optional. The kit converts the 260 Series III or the 270 VOM produced prior to June 1, 1959. It consists of a modified case which permits latching the Model 661 securely to the underside of the multitester.

Adapter Case Kit 402 for 260 Series II.

Use of this kit is required for this adapter. It includes a modified case which permits latching the Model 661 securely to the underside of the multimeter, and also provides a 50 μA D.C.current range for the 260. The 50 microampere range is required for other Adapter Models.

CONTROLS AND CONNECTORS

BINDING POSTS

DC currents to be measured are applied to the Model 661 through two of the six binding posts located along the bottom of the front panel. One of the binding posts (marked -) is common for all ranges. Each of the remaining five binding posts represents a current range for the instrument.

260 – 661 SWITCH

This is a convenience switch located at the right center of the front panel. It allows the use of the VOM without detaching the Model 661.

260 DIRECT JACKS

The 260 DIRECT jacks are located at the left center of the front panel. When the 260 DIRECT –

661 ADAPTER switch is in the 260 DIRECT position, these jacks are connected directly to the 260/270 input jacks marked + and COMMON –.

SECTION II

OPERATING INSTRUCTIONS

1. Initial Adjustments

a. 260/270 control settings.

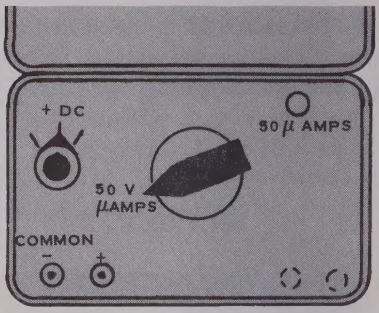
1. With the Model 661 disconnected, check the meter pointer position for zero indication with the VOM in its operating position. If the pointer is off zero, adjust the bakelite screw just under the meter. Refer to the VOM Operator's Manual for this adjustment.

2. Set the 260/270 for +DC operation.

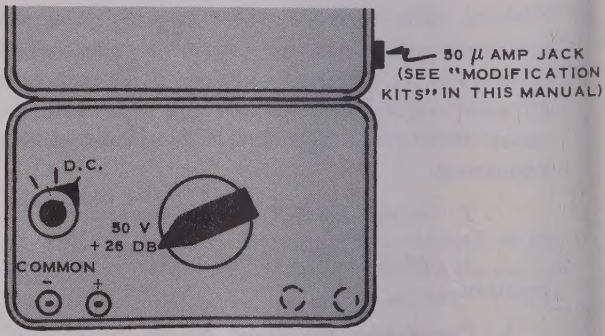
3. Set the 260/270 range switch to the 50V position.

b. Connecting the Model 661 to the 260/270.

1. Insert the top four plugs of the Model 661 into the lower four jacks on the front panel of the 260/270.



(a) 260 Series III Control Positions



(b) 260 Series II Control Positions

FIGURE 3 - 260 CONTROL POSITIONS
FOR USE WITH MODEL 661

2. Plug lead with banana plug into 50μAMP. jack. (50μ/250 MV jack on 255 & 250 V.O.M.)

3. Position the locking latch underneath the instrument to secure the two units together.

CAUTION

If your 260/270 case does not have the locking provision, avoid applying excessive pressure to the top of the Adapter when it is connected to the VOM and used in the Adjust-A-Vue position. A modification kit which includes a new case with an adapter lock provision is recommended for optimum rigidity (see page 3).

c. Model 661 Control Settings.

1. Set the 260 Direct - 661 Adapter switch of the Model 661 to the 661 ADAPTER position.

2. Measuring DC Current

WARNING

Always remove all power from the circuit to be tested before connecting or disconnecting the test leads, and before changing the range connections of the leads.

a. De-energize the circuit under test.

b. Connect a suitable lead from the – binding

post on the Model 661 to one side of the circuit under test.

c. Select a second binding post which will provide a suitable current indication. When in doubt as to the amount of current to be measured, use the 25A binding post first, and then change to a lower range if the current is within the lower range. Connect a suitable lead from this selected binding post to the other side of the circuit under test.

NOTE

The test leads and connections for steps b and c must be adequate for the circuit under test. The test leads must have ample current carrying capacity and each connection must be tight and offer low resistance.

d. Read the current, using the 260/270 scale indicated above the range binding post used.

3. Using the VOM circuit while the Model 661 is attached.

a. Set the 260 Direct – 661 Adapter switch of the Model 661 at its 260 DIRECT position.

b. Connect the regular VOM test leads to the 260 DIRECT jacks at the left side of the Model 661. Proceed with the standard operating instructions for the VOM, according to its Operator's Manual.

SECTION III

THEORY OF OPERATION

GENERAL

The Model 661 consists of a Universal (tapped) Shunt, the selected portions of which are connected in series with the circuit under test. The 260/270 in turn measures the voltage drop across the selected portion which is proportional to the current flowing in the circuit under test.

With the highly accurate components which are used in the construction of the Model 661 DC Ammeter, the accuracy of measurements obtained is excellent.

Circuit connections for the Model 661 are the same as for any other type of ammeter. The shunt is connected in series with the circuit under test, and offers very low impedance in the circuit.

SECTION IV

MAINTENANCE

CASE REMOVAL

To remove the instrument from the case, remove the four screws located in the four corners on the back of the instrument case. All of the components are attached to the front panel.

PARTS REPLACEMENT

All of the components of the Model 661 have been engineered for many years of useful life. However, there are conditions under which parts may become damaged or faulty, and require replacement. Refer to the circuit diagram in figure 4 to help identify and locate any suspected part.

In the event of any component failure, order replacement parts from one of the Parts Depots in the list beginning on page 13. Repair service is available either at the Simpson Electric Company or its authorized Warranty Repair Stations.

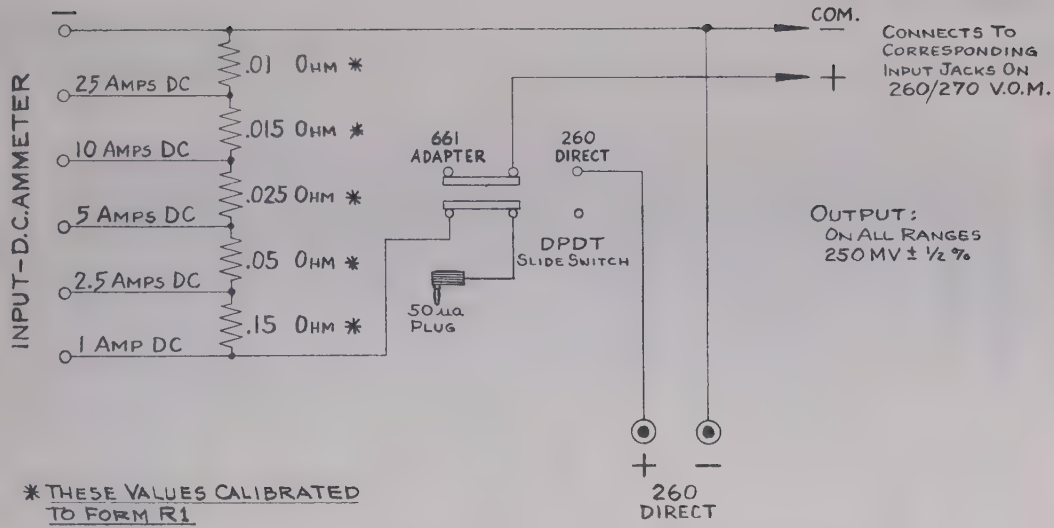


FIGURE 4 - SCHEMATIC DIAGRAM, SIMPSON DC AMMETER MODEL 661

PARTS LIST

Reference Symbol	Description	Simpson Part No.
S1	Switch, DPDT, slide	1-118192
R1	Calibrated Shunt Assembly	10-802509
	Case Adapter	10-860379
	Panel Assembly	10-867587
	Binding Post	1-112875
	Jack Eyelet	1-135581

Arizona, Phoenix 85034 Metermaster/Phoenix 2633 E. Buckeye Road	Area Code 602 273-7331
California, Glendale 91201 JSD Engineering Company 6915 San Fernando Road	Area Code 213 849-6187
California, Los Angeles 90022 Metermaster/Los Angeles Division of Kierulff Elec., Inc. 5645 E. Washington Blvd.	Area Code 213 685-4340
California, Los Angeles 90007 Quality Electric Division of Kierulff Elec., Inc. 3700 South Broadway	Area Code 213 232-3501
California, Mountain View 94041 Kierulff/Metermaster 2484 Middlefield Road	Area Code 415 968-6292
California, San Diego 92111 Metermaster/San Diego 8137 Engineer Road	Area Code 714 276-5202
California, San Francisco 94105 Pacific Electrical Instrument Lab. 111 Main Street	Area Code 415 421-7185
Canada, London, Ontario Bach-Simpson Ltd. 1255 Brydges Street P.O. Box 484	Area Code 519 451-9490
Colorado, Denver 80209 Metermaster Instrument Corporation 748 So. Broadway	Area Code 303 722-5766
Connecticut, Middletown Mancib Company Randolph Road—PO Box 467	Area Code 203 Diamond 7-5629

Connecticut, New Haven 06511 Kaufman Instrument Labs Inc. 810 Dixwell Avenue	Area Code 203 776-7201
Florida, Miami 33136 Florida Precision Instrument Corp. 800 N.W. 7th Avenue	Area Code 305 374-1731
Florida, Orlando 32806 Electro Tech Inc. 307 - 27th Street	Area Code 305 423-5589
Georgia, Hapeville 30054 Electro-Tech, Inc. 3020 Commerce Way	Area Code 404 758-7205
Hawaii, Honolulu 96817 Electronic Systems Inc. 1622-26 Silva Street	851-457 811-132
Illinois, Chicago 60625 (Niles) A & M Instrument, Incorporated 7800 N. Merrimac	Area Code 312 966-8100
Illinois, Chicago 60644 Pacific Indicator Company 5924 W. Madison Street	Area Code 312 261-1330
Illinois, Chicago 60644 Simpson Electric Company 5200 W. Kinzie Street	Area Code 312 379-1121
Kansas, Shawnee Mission 66205 Sturtz Instrument Co. 4705 Mission	Area Code 913 236-4705
Louisiana, New Orleans 70115 Industrial Instrument Works 3305 Tchoupitoulas Street	Area Code 504 895-5621
Maryland, Beltsville 20705 Meter Devices Inc. 11325 Maryland Ave.	Area Code 301 345-7775
Maryland, Timonium 21093 Edgerly Instrument Labs., Inc. 110 West Timonium Road	Area Code 301 252-1260
Massachusetts, Burlington 01803 The Mancib Co. Middlesex Turnpike at "A" St.	Area Code 617 272-9450

Massachusetts, Needham Heights 02194 Instruments, Incorporated 570 Hillside Avenue	Area Code 617 444-9410
Michigan, Detroit 48220 Ram Meter, Inc. 1100 Hilton Road Ferndale	Area Code 313 547-1000
Minnesota, Minneapolis 55411 Instrumentation Services Inc. 917 Plymouth Avenue	Area Code 612 521-8803
Missouri, St. Louis 63112 Scherrer Instruments 5449 Delmar Blvd.	Area Code 314 367-9800
New Jersey, Belleville 07109 Marshall Instruments, Inc. 236 Washington Avenue	Area Code 201 751-1190
New York, Buffalo 14216 Electrical Instrument Labs. 932 Hertel Avenue	Area Code 716 876-0880
N. Y., Great Neck, Long Island 11022 Simpson Instrument Sales & Service, Inc. 130 Cutter Mill Road	Area Code 212 683-0674 Area Code 516 482-3103
New York, Great Neck, L.I. 11022 A & M Instrument, Inc. Community Drive	Area Code 516 487-0500
New York, New York 10011 Electro-Tech Equipment Company 85 Tenth Avenue	Area Code 212 675-2400
New York, Syracuse 13215 Syracuse Instrument Lab. 4895 South Avenue Box 96	Area Code 315 492-1651
New York, Vestal 13850 Compton Industries Inc. 333 Vestal Parkway East P.O. Box 351	Area Code 607 748-3349

North Carolina, Charlotte 28214 Electro-Tech Inc. 5141 Belhaven Blvd.	Area Code 704 392-7451
Ohio, Cleveland 44135 Weschler Electric Company 4250 W. 130th Street	Area Code 216 251-4609
Ohio, Cleveland 44103 Pioneer-Standard Electronics, Inc. 5403 Prospect Avenue	Area Code 216 432-0010
Ohio, Dayton 45404 SREPCO Electronics Div. of Pioneer Standard Electronic, Inc. 314 Leo Street	Area Code 513 224-0871
Oregon, Portland 97217 Industrial Instrument Repair Lab. 1910 N. Killingsworth St.	Area Code 503 285-6629
Pennsylvania, Philadelphia 19115 Sunshine Scientific Instrument 1810 Grant Avenue	Area Code 215 673-5600
Texas, Dallas 75204 Ultra Instrument Lab., Inc. 3515 Swiss Avenue, Suite 117	Area Code 214 826-6395 826-6396
Washington, Seattle 98119 The Instrument Lab. Inc. 934 Elliott Avenue West	Area Code 206 283-5850
Wisconsin, Milwaukee 53202 The Electro-Mechano Company 261 East Erie Street	Area Code 414 272-4050

Add-A-Tester Adapter

Model 651
DC VTVM

Designed for

TRANSISTOR CIRCUITRY and GENERAL (AGC, Power Supplies, etc.) SERVICING.

Laboratory Type DC Coverage (10 ranges)

★

★

SIMPSON ELECTRIC COMPANY

5200 West Kinzie Street • **Chicago 44, Illinois**

Add-A-Tester Adapter

Model 655

Microvolt Attenuator

Designed for

AUDIO CIRCUITRY DESIGN and
SERVICING, DC CIRCUITRY, and
INDUSTRIAL SERVICING and DESIGN

★

★

SIMPSON ELECTRIC COMPANY

5200 West Kinzie Street • Chicago 44, Illinois

Warranty

SIMPSON ELECTRIC COMPANY warrants each instrument and other articles of equipment manufactured by it to be free from defects in material and workmanship under normal use and service, its obligation under this warranty being limited to making good at its factory any instrument or other article of equipment which shall within 90 days after delivery of such instrument or other article of equipment to the original purchaser be returned intact to it, or to one of its authorized service stations, with transportation charges prepaid, and which its examination shall disclose to its satisfaction to have been thus defective; this warranty being expressly in lieu of all other warranties expressed or implied and of all other obligations or liabilities on its part, and SIMPSON ELECTRIC COMPANY neither assumes nor authorizes any other persons to assume for it any other liability in connection with the sale of its products.

This warranty shall not apply to any instrument or other article of equipment which shall have been repaired or altered outside the SIMPSON ELECTRIC COMPANY factory or authorized service stations, nor which has been subject to misuse, negligence or accident, incorrect wiring by others, or installation or use not in accord with instructions furnished by the manufacturer.

Simpson ELECTRIC COMPANY
5200 W. Kinzie Street, Chicago, Illinois 60644 Phone: (312) 379-1121
Export Dept: 400 W. Madison Street, Chicago, Illinois 60606, Cable, Simelco
IN CANADA: Bach-Simpson Ltd., London, Ontario
IN INDIA: Ruttonsha-Simpson Private Ltd., International House, Bombay-Agra Road, Vikhroli, Bombay
IGN DIVISION

Quality is the indispensable component of every Simpson instrument . . . . . .